

Mark the best answer.

1. A tailor is making jackets with 3 buttons each. He starts out with 129 buttons, and he wants to find if there will be any buttons left. Which of the following will help him determine if 129 is divisible by 3? (9-1)
- A Because the last digit is not 0 or 5, 129 is not divisible by 3.
  - B Because  $1 + 2 + 9 = 12$  and 12 is divisible by 3, 129 is divisible by 3.
  - C Because 129 is not even, 129 is divisible by 3.
  - D Because 9 is divisible by 3, 129 is divisible by 3.
2. Which of the following lists all the common factors of 26 and 44? (9-4)
- A 1, 2
  - B 1, 2, 4
  - C 1, 3, 4, 12
  - D 1, 4, 6, 8
3. What is the prime factorization of 48? (9-3)
- A  $4 \times 3^2$
  - B  $2^4 \times 3$
  - C  $2 \times 3 \times 4$
  - D  $4^3$
4. A theater has 62 seats. Which list includes all the factors of 62? (9-1)
- A 1 and 62
  - B 1, 4, 6, 8, 12, 24, and 62
  - C 1, 2, 3, 4, 6, 12, and 62
  - D 1, 2, 31, and 62
5. The coach wants a composite number of players on the team so she can divide them into groups. Which of the following is composite? (9-2)
- A 5
  - B 7
  - C 15
  - D 17
6. Ricky made 54 cookies for his class. What is the prime factorization of 54? (9-3)
- A  $3^3$
  - B  $3^3 \times 2$
  - C  $3^4$
  - D  $3 \times 4^3$

7. Chuck and Claire are playing a game in which players score 2 points if they hit a large blue target and 3 points if they hit a small red target. In one game, Claire hit the small red target every time she scored. For which game is that possible? (9-1)

Game	Chuck	Claire
1	25	19
2	29	35
3	23	22
4	15	21

- A Game 1  
B Game 2  
C Game 3  
D Game 4
8. Jocelyn is buying scarves for her family. Long scarves cost \$12 each, and short scarves cost \$9 each. If she wants to buy 1 more short scarf than long scarves, how many of each type should she buy to spend exactly \$72? (9-5)
- A 4 short scarves and 3 long scarves  
B 5 short scarves and 4 long scarves  
C 3 short scarves and 4 long scarves  
D 6 short scarves and 5 long scarves

9. What is the missing exponent in the equation showing the prime factorization of 40? (9-3)

$$40 = 2^{\blacksquare} \times 5$$

- A 2  
B 3  
C 5  
D 8
10. There are 18 boys and 24 girls in a relay race. If they are to be divided into groups of equal size with each group having only boys or only girls, what is the largest number that can be in each group? (9-4)
- A 3  
B 4  
C 6  
D 8
11. Which number of markers can not be divided equally except by giving one to each person? (9-2)

- A 4  
B 12  
C 19  
D 39

Name \_\_\_\_\_

- 12.** What is the prime factorization of 12? (9-3)

**A**  $2^2 \times 3$   
**B**  $2^3 \times 3$   
**C**  $3 \times 4^2$   
**D**  $2 \times 3 \times 4$

- 13.** Which number is prime? (9-2)

**A** 33  
**B** 21  
**C** 18  
**D** 2

- 14.** The table shows the number of strawberries and blueberries that Fred brought to class. If they are to be divided into groups that consist of only one kind of berry, with the same number of berries in each group, what is the greatest number of berries that can be in each group? (9-4)

Item	Number
Strawberries	22
Blueberries	34

**A** 2  
**B** 4  
**C** 8  
**D** 11